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# Health Care Workers Need COVID-19 Vaccination: Clinical, Public Health, and Ethical Considerations

In the United States today, 50% of the entire population has received at least 1 coronavirus disease 2019 (COVID-19) vaccination and 40% has received both. In addition, both cases and deaths from COVID-19 were plummeting until recently.<sup>1</sup> In 2016, the United States had been judged by the World Health Organization (WHO) to have been the best prepared to mitigate and contain any existential threat but, in 2020, turned out to be the least prepared to deal with the actual threat.<sup>2</sup> In 2021 in the United States, collegial, collaborative, and coordinated efforts of academia, industry, federal, state and local governments, and regulatory authorities led to the development of effective and safe vaccines that have been widely distributed in record times. Most vaccines take up to a decade or longer to develop and prove their efficacy and safety, whereas multiple COVID-19 vaccines have been developed and widely distributed throughout the United States in less than 1 year.<sup>3</sup>

Vaccines to prevent common and serious infectious diseases have had a greater impact on improving human health than any other medical advance of the 20th century. Smallpox and poliomyelitis were eradicated, and measles, mumps, rubella, tetanus, and hepatitis B are now rare.<sup>4</sup> Most US public health officials agree that these vaccines provide the *only* hope for containing COVID-19. Since early 2020, COVID-19 has caused over 34 million cases

and killed more than 600,000 patients in the United States. Worldwide, the corresponding figures are about 194 million cases and about 4.2 million deaths.

Clinicians should be aware of the similarities and differences between the usual bouts of influenza and COVID-19. First and foremost, the mortality rate from COVID-19 is about 30 times higher. Second, a patient positive for COVID-19 is likely to transmit to about 6 people compared with 1 or 2 for influenza. Third, the efficacy of COVID-19 vaccines are 95%, which is significantly higher than for conventional influenza vaccine. Fourth, the COVID-19 vaccine offers almost complete protection against hospitalization, admission to intensive care units, and death. Last, of perhaps the greatest relevance to health care workers, is the fact that among the 5% of those receiving the COVID-19 vaccine who become infected, randomized data indicate that 94% will not transmit the virus to others.<sup>3</sup> Last, but not least, the side effects of the COVID-19 vaccine are far less than for influenza. Specifically, serious side effects occur in the range of 1 per million doses

Despite these sobering statistics, there remains “vaccine hesitancy” even among health care workers. Specifically, large numbers of health care workers, up to 50%, including the most highly trained professionals, physicians, nurses, pharmacists, and other paramedicals, have rejected the vaccine. Many have done so because it is “too new” and others because they question the safety. Finally, some distrust government and doubt the veracity of the reported extraordinarily positive results from large-scale randomized trials. Some perceive conspiracy theories, whereas others refuse based on partisan politics. For example, in the US Congress 100% of Democrats report having been vaccinated in the House and Senate compared with 45% and 92%, respectively, among Republicans.<sup>4,5</sup>

Rejection of the COVID-19 vaccine by health care workers poses an “ethical quagmire.” On a daily basis, we try to prevent and treat illness based on a sufficient totality of evidence that allows rational clinical decision-making for individual patients and policy making for the health of the general public.<sup>6</sup> Ironically, virtually all health care workers would seek effective and safe therapies for any communicable disease. Most routinely accept major

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surgery or toxic chemotherapy or radiation therapy for cancer. Nonetheless, 117 hospital workers in Texas sued their employer over a COVID-19 vaccine mandate. They argued that the vaccines are “experimental and dangerous,” but their lawsuit was dismissed by a district judge who opined that this position is “false and also irrelevant.” She further opined that health care workers can “freely choose to accept or refuse a COVID-19 vaccine but, if they refuse, they simply need to work somewhere else.”<sup>7</sup> Finally, health care workers should be apprised of the issues surrounding the Delta variant of COVID-19, which originated in India. This variant is more transmissible and causes more hospitalizations than the original strain. The Delta variant accounts for >58% of US cases and >90% in the United Kingdom (UK) prompting health officials to continue their lockdown. Of 33,000 cases of COVID-19 attributable to the Delta variant in the UK, 383 were admitted to hospitals and most had not been vaccinated. Health care workers in the United States should also remain acutely aware of the facts that 58% occurred among the unvaccinated but less than 10% occurred among the fully vaccinated. Last, but not least, the available vaccines are perhaps 96% protective against this more transmissible and deadly strain.<sup>8</sup>

Since COVID-19 infection in most healthy younger adults is asymptomatic or only minimally symptomatic, health care workers who reject the vaccine greatly increase their risk of becoming infected. They may then expose their patients, families, and fellow citizens to COVID-19. Some hospitals and clinics are requiring COVID-19 vaccination as a mandatory condition of employment. The US Departments of Defense as well as Health and Human Services have long mandated immunization of all their military personnel unless there is a well-documented history of medical intolerance of a vaccine. Further, this policy prevented tetanus despite millions of tetanus-prone injuries in World War II. Assuring that all military personnel have vaccine immunity against vaccine-preventable infections is considered an unquestionable facet of national security. With respect to other vaccine preventable communicable diseases, most US states mandate proof of immunization for children entering and remaining in school, and many are tightening the few acceptable exclusions. Hospitals have mandated proof of immunity against vaccine-preventable infections of measles, mumps and rubella, as well as hepatitis B, in most cases by proof of immunization, as a condition of employment, and in recent years, many hospitals have made annual influenza immunization a condition of employment.

Field studies in large numbers of volunteers participating in the many COVID-19 trials and postimmunization surveillance of millions of vaccine recipients have shown that the vaccine is as safe as or safer than the most other vaccines that are being administered on a daily basis to millions of children and adults. Further, the levels of protection provided by the COVID-19 vaccine far exceed those of the influenza or pneumococcal vaccines, which have been widely accepted by the vast majority of adults

given these vaccines by their primary care providers, including the vast majority of health care providers.

Last, but not least, the US Centers for Disease Control and Prevention (CDC) issued new guidelines indicating that if you are fully vaccinated you can resume activities that you did prior to the pandemic. Further you can resume activities without wearing a mask, except where required by federal state, local, tribal, or territorial laws, rules, and regulations, including local business and workplace.<sup>8</sup> This is more good news for health care workers because there is a persuasive totality of evidence on the benefits of masking to prevent COVID-19.<sup>5</sup>

As dedicated and conscientious health care workers we should contribute to the achievement of herd immunity for COVID-19. Given the already widespread prevalence of COVID-19 in the United States and worldwide, it is entirely plausible that a highly virulent strain associated with a higher transmissibility, mortality, and resistance to existing vaccine may emerge. If so, then this would spread rapidly and hundreds of millions of people will die worldwide, perhaps within a matter of months; health care systems around the world will be overwhelmed; and national economies around may well collapse. In the United States, all these issues illustrate the necessity, the clinical and public health challenges, and the ethical implications for health care workers to achieve high levels of vaccinations to protect themselves, their coworkers, and the general public.

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